

Warnings were issued on the 20th for frost in the extreme northern portion of the district, on the 26th for probably freezing weather in northwestern Oklahoma and the Texas Panhandle, and on the 27th for frost in northern Oklahoma "if weather clears." Conditions were approximately as forecast in the first two instances, but cloudy weather prevented frost on the morning of the 28th.

No storm warnings were issued or required. Small-craft warnings were displayed in the Corpus Christi, Tex., district on the 19th and on the east coast of Texas on the 29th and were justified.—*R. A. Dyke.*

DENVER FORECAST DISTRICT

Lows of marked intensity moved eastward along the northwestern border with unusual frequency, while troughs of pressure extended southward or southwestward across the Rocky Mountain region during much of the month. A number of disturbances also advanced eastward from the Plateau States. Highs of important development passed across the northern Rocky Mountain sections from the 17th to the 20th and on the 24th and 25th.

These pressure conditions were attended by precipitation much in excess of normal in the central and northeastern portions of the district and by a deficiency in portions of central and western Montana and along the southwestern border. It was colder than the seasonal average from Montana southward to Utah and northern New Mexico. On the 25th and 26th snow extended southward along the eastern slope of the Rockies to northeastern Colorado.

Brisk to strong westerly winds were forecast on the morning of the 1st for Wyoming and Montana, strong westerly winds on the evenings of the 13th and 27th for Wyoming and eastern Colorado, and brisk to strong westerly winds on the morning of the 28th for eastern Colorado and strong westerly winds for Wyoming and that portion of Montana east of the Divide. The forecasts were generally verified.

Frost or freezing temperature warnings were issued for those portions of the district where they were required on the 7th, 10th, 13th, 14th, 15th, 17th, 18th, 19th, 20th, 21st, 24th, 25th, 26th, 27th, 29th, and 30th. These also were generally verified.—*J. M. Sherier.*

SAN FRANCISCO FORECAST DISTRICT

A disturbance of the Cordova type required small-craft warnings to be displayed at Washington seaports on the 2nd, which were changed to southwest-storm warnings at coast stations later in the day. Winds along the coast reached gale force the following night. On the 4th southeast-storm warnings were displayed at Oregon and Washington seaports, which were followed by gales on the coast during the ensuing 24 hours. On the 11th a disturbance which originated in the Gulf of Alaska called for small-craft warnings at Washington stations. After this no further warnings were required until the 26th, when a very large low-pressure system of winter type, central near the Alaskan Peninsula, encroached upon the North Pacific coast, and southeast-storm warnings were displayed at points north of Cape Blanco. Southerly gales prevailed along the coast the following night.

Warnings of local frosts were issued on the 14th and 15th for parts of the plateau and intermountain regions.—*Thomas R. Reed.*

RIVERS AND FLOODS

By H. C. FRANKENFIELD

There were no floods of consequence during the month of September. Heavy rains on September 5 and 6 over the drainage basins of the Little Arkansas River and Chisholm Creek necessitated flood warnings on the 6th for those rivers. No material damage was done along the Little Arkansas River, but waters from Chisholm Creek inundated about 40 acres of land in North Wichita, Kans., some of which was residential, and some stock-yards property. The damage amounted to several thousand dollars.

On September 6 a warning was issued for the Solomon River at Beloit, Kans., and two days later a crest of 22.5 feet occurred, 4.5 feet above the flood stage.

Persistent low pressure over the plateau region and Arizona caused a period of showery weather with occasional local downpours of rain from September 6 to 14. On the 10th and 11th the San Juan River at Farmington, N. Mex., rose above the flood stage of 8 feet, reaching a crest of 9.6 feet on the 11th. There was also a decided rise in the Colorado River, for which warnings were necessary, although flood stages were not reached except at Parker, Ariz., where the flood stage of 7 feet was exceeded by 3.8 feet on September 18, the river remaining above the flood stage from September 14 to 25, inclusive.

Although no serious damage was done, the heavy local rains caused numerous washouts and earth slides along the highways and railroads in southwestern Colorado and northwestern New Mexico.

Following heavy local rains in Arizona on September 12 and 13, flash rises occurred in a number of streams, but without damage. Warnings were issued on September 12.

River and station	Flood	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
	Feet			Feet	
Wabash-Tipppecanoe River: Norway, Ind.....	6	30	(¹)	6.0	30
Solomon River: Beloit, Kans.....	18	7	8	22.5	8
Rio Grande: San Marcial, N. Mex.....	2	14	14	4.0	14
Colorado River: Parker, Ariz.....	7	14	25	10.8	18
Colorado-San Juan River: Farmington, N. Mex.....	8	10	11	9.6	11
Gila River, Kelvin, Ariz.....	5	12	12	6.0	12
Salt River, Phoenix, Ariz.....	5	12	12	8.5	12

¹Probably continued at end of month.

MEAN LAKE LEVELS DURING SEPTEMBER, 1927

By UNITED STATES LAKE SURVEY

[Detroit, Mich., October 5, 1927]

The following data are reported in the "Notice to Mariners" of the above date:

Data	Lakes ¹			
	Superior	Michigan and Huron	Erie	Ontario
Mean level during September, 1927:				
Above mean sea level at New York.....	602.70	579.16	571.68	245.27
Above or below—				
Mean stage of August, 1927.....	-0.07	-0.30	-0.33	-0.50
Mean stage of September, 1926.....	+1.37	+0.65	+0.25	+0.41
Average stage for September last 10 years.....	+0.46	-0.96	-0.44	-0.43
Highest recorded September stage.....	-1.38	-4.27	-2.26	-2.34
Lowest recorded September stage.....	+1.37	+0.94	+0.75	+1.27
Average departure (since 1860) of the September level from the August level.....	+0.05	-0.20	-0.25	-0.40

¹ Lake St. Clair's level: In September, 1927, 574.36 feet.